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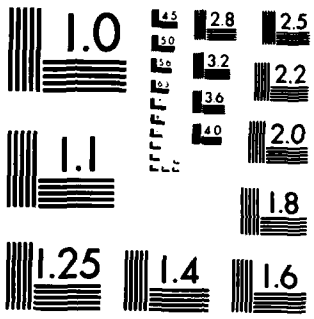

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DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
P. O. BOX 889
SAVANNAH, GEORGIA 31402

SASEN-CR

11 JUN 1980

SUBJECT: Cooper River Rediversion Project, Lake Moultrie and Santee River, South Carolina, Design Memorandum 10 - Necessity and Plan for Relocation of Roads, Supplement No. 1 - Future Widening of U.S. Route 52

Division Engineer, South Atlantic
ATTN: SADEN-G

1. I am inclosing thirteen (13) copies of subject design memorandum supplement for approval in accordance with applicable provisions of ER 1110-2-1150 dated 1 October 1971, as revised through Change 7, 22 July 1974. This supplement covers the Government's obligations in regard to the future widening of U.S. Route 52 as necessitated by the South Carolina Department of Highways and Public Transportation design criteria.

2. I recommend that this supplement be approved as a basis for preparation of a relocations contract with the South Carolina Department of Highways and Public Transportation and for the preparation of construction plans and specifications on applicable portions of the subject project.

FOR THE DISTRICT ENGINEER:

1 Incl (13 cys)
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RALPH N. WHEELER
Chief, Engineering Division

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COOPER RIVER REDIVERSION PROJECT

LAKE MOULTRIE AND SANTEE RIVER, SOUTH CAROLINA

DESIGN MEMORANDUM NO. 10

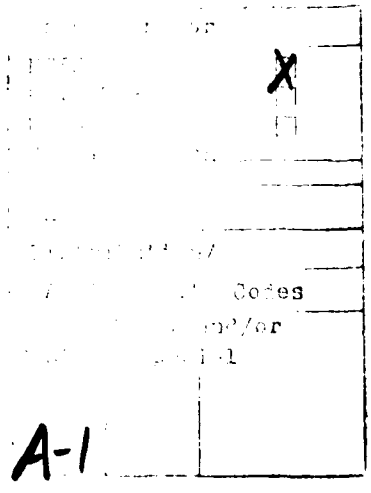
NECESSITY AND PLAN

FOR

RELOCATION OF ROADS

SUPPLEMENT NO. 1

Future Widening of U.S. Route 52



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U.S. ARMY ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

COOPER RIVER REDIVERSION PROJECT

LAKE MOULTRIE AND SANTEE RIVER, SOUTH CAROLINA

DESIGN MEMORANDUM NO. 10

NECESSITY AND PLAN

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SUPPLEMENT NO. 1

FUTURE WIDENING OF U.S. ROUTE 52

INTRODUCTION

1. Authorization. The Cooper River Rediversion Project, which will reduce shoaling and restore the historic saline regime to the Cooper River and Charleston Harbor, was authorized by the River and Harbor Act of 1968 (Public Law 90-483, 90th Congress, S. 3710, August 13, 1968).

2. Purpose. The purpose of this supplement is to establish the basis for the negotiation of a relocation contract with South Carolina Department of Highways and Public Transportation (SCDHPT) for the future widening of U.S. Route 52.

3. Scope. This supplement covers the necessity for future widening of U.S. Route 52 to provide a four-lane facility, and the Government's obligation to reimburse the SCDHPT for the cost of building that portion of road that crosses the rediversion canal. This supplement also presents an estimate of cost.

4. Location. The rediversion channel extends from the northeast corner of Lake Moultrie to Lake Mattassee, which flows into the Santee River. The channel extends past St. Stephen, South Carolina, approximately 1-1/2 miles to the north.

5. Necessity for Relocation.

a. The construction of the Cooper River Rediversion Canal necessitates the relocation of U.S. Route 52. ER1180-1-1, Section LXXIII, Part 1 establishes that the final responsibility for accomplishing relocation or otherwise compensating the owner for the termination of his rights, rests with the Federal Government and further establishes in Part 2, "Decision as to economic impact of a substitute network of roads must consider the normal future economic growth of the area if the project were not constructed."

b. The twenty-year projected traffic count of 6,230 vehicles per day warrants a four-lane facility for this road. (Refer to appendix E) At the time the DM was being prepared, the South Carolina State Highway Department indicated that they were not far enough along on their long-range planning to determine the final alignment for four-laning of U.S. Route 52 in the study area. The highway department requested that the Corps of Engineers replace U.S. Route 52 on its present alignment with only a two-lane roadway.

c. The SCDHPT notified the Savannah District by letter dated 12 Feb 80 that their six-year construction program includes multi-laning U.S. Route 52 in the project area. Their letter further indicated that anything less than a multi-lane facility would not be compatible with the Department's plans which are based on the concept that highway designs should be made to accommodate, not just the present traffic, but also the design year traffic twenty years hence, and requested the Corps of Engineers to provide for the construction and funding of a multi-lane facility. Refer to Supplement No. 1, exhibit A, for 12 Feb 80 letter.

6. Attitude of the Owner. A meeting was held on 19 March 1980 between representatives of the Charleston and Savannah Districts of the Corps of Engineers and the SCDHPT to discuss the future widening of U.S. Route 52. A procedure for accomplishing the required relocation of U.S. Route 52, including future multi-laning, was proposed at the meeting. The SCDHPT is in general agreement with the Plan of Relocation as proposed in this supplement and have expressed their willingness to cooperate with the Government in the accomplishment of the relocation work.

7. Proposed Procedure for Accomplishing Required Relocation To Include Future Multi-Laning.

a. The SCDHPT indicated a desire for the Corps of Engineers to provide for construction and funding of a multi-lane facility where the rediversion canal crosses U.S. Route 52. After discussion of the Department's request, it was recognized that they had not completed their studies to determine the alignment of U.S. Route 52 when widened in the future. Since the alignment

has not been determined, the Corps of Engineers did not want to construct a four-lane facility at the present alignment and the State not utilize the facility in the future. In order to satisfy the Corps of Engineers obligation in providing a four-lane facility and leave the SCDHPT flexibility in re-routing U.S. Route 52, the following was discussed as an acceptable procedure for reimbursing the SCDHPT for four-laning the road:

(1) The Corps of Engineers will construct a two-lane facility as shown in the basic design memorandum submitted to SCDHPT and previously agreed to by them, and

(2) A lump sum payment will be made to the SCDHPT by the Corps of Engineers as consideration for the SCDHPT's additional costs that will be incurred by constructing a bridge and approaches to four-lane U.S. Route 52 in the future.

b. The lump sum payment will be made a part of the relocation contract with the SCDHPT and will constitute full compensation for the Government's obligation in providing a four-lane facility. The lump sum payment will be based on the following requirements:

(1) The Government will advertise for bids for construction of the two-lane facility as shown in the design memorandum and plans and specifications. A construction contract will be awarded and the lump sum agreement will be based on that amount. Since the two-lane facility proposed to be constructed will have two-way traffic, design criteria dictates that the bridge have a width of 44 feet face-to-face of New Jersey-type barrier parapets and 44 foot wide approaches. When the future two-lane facility is constructed, it will be based on one-way traffic and will have a bridge width of 39½ feet face-to-face of New Jersey-type barrier parapets and appropriate approaches. The actual lump sum payment will be based on the awarded contract amount for the two-lane facility having the 44 foot width, minus a reduction for the difference between a 44 foot wide facility and a 39½ foot wide facility. This reduction will be negotiated with the SCDHPT and the agreed-to reduction noted in the relocation contract.

(2) The settlement will be placed in escrow and allowed to accrue interest. The initial settlement plus interest accrued would be utilized by the SCDHPT to fund construction of the canal crossing when four-laning U.S. Route 52 in the future; however, these funds will be held in escrow for a period of years mutually agreeable to the Government and the SCDHPT. At the end of that period the SCDHPT will have obligated the money towards a construction contract or the initial settlement, plus interest, will be returned to the Government.

(3) It will be the SCDHPT's responsibility to design and construct the future facility.

SOURCE OF DATA AND DESIGN CRITERIA

8. Maps and Surveys. The plan for the proposed four-laning of U.S. Route 52 is based on assumptions agreed to by the SCDHPT and the Corps of Engineers. No additional field surveys were made. It is assumed the future facility will be equal to the two-lane facility proposed for construction except that it will have a 39½ foot width in lieu of the 44 foot wide facility to be constructed by the Government.

9. Design Standards. The proposed Plan of Relocation is to provide a basis for the lump sum agreement only. The design standards assumed for the future facility are based on the same capacities and equivalent engineering criteria as the two-lane facility recommended for construction in the design memorandum with the exception that the future facility will have a 39½ foot width.

COST ESTIMATE

10. General. The costs shown in Table 1 are a reasonably accurate estimate for the construction of the two-lane facility to be constructed by the Government for U.S. Route 52. The costs shown are based on present-day price levels and the design submitted in the basic DM as approved by SCDHPT.

11. Right-of-Way. Under the proposed lump sum settlement with SCDHPT, the Government will not be obligated to purchase any additional right-of-way.

TABLE 1
DETAILED COST ESTIMATE
(February 1980 Price Level)

DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
U.S. ROUTE 52				
ROADWAY				
Mobilization	JOB	L.S.	-	$ 100,000
Clearing & Grubbing	19	ACRE	$1400.00	26,600
Clear Disposal Area	7	ACRE	1000.00	7,000
Common Excavation				
a. First 148,000 C.Y.	148,000	C.Y.	2.75	407,000
b. Over 148,000 C.Y.	63,000	C.Y.	2.50	157,500
18" R.C.P., CL III or 18" C.M.P. 16 Ga. (Detour)	84	L.F.	18.00	1,512
24" R.C.P., CL III or 24" C.M.P., 16 Ga. (Detour)	100	L.F.	24.00	2,400

TABLE 1
DETAILED COST ESTIMATE
(continued)

DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
24" R.C.P., CL. III or 24" C.M.P., 16 Ga., Type A	68	L.F.	$ 26.50	$ 1,802
48" R.C.P., CL. III or 48" C.M.P., 12 Ga. (Detour)	164	L.F.	60.00	9,840
24" R.C. or C.M. Flar. End Sec.	2	EA	220.00	440
Class A Concrete, Box Culvert	165	C.Y.	300.00	49,500
Reinf. Steel, Box Culvert	22,340	LB.	0.45	10,053
Asph. Conc. Surface Course, 1½"	6,230	S.Y.	2.25	14,018
Asph. Conc. Binder Course, 2½"	6,230	S.Y.	3.75	23,363
Dbl. Bitu. Surface Treatment	10,880	S.Y.	2.00	21,760
Trip. Bitu. Surface Treatment	1,640	S.Y.	3.00	4,920
Stabilized Aggregate Base, 6"	2,340	S.Y.	3.00	7,020
Stabilized Aggregate Base, 8"	11,330	S.Y.	4.00	45,320
Stabilized Aggregate Base, 11"	10,860	S.Y.	5.50	59,730
Aggregate Surface Course, 6"	4,440	S.Y.	3.00	13,320
R/W Markers	23	EA	30.00	690
Steel Beam Guardrail (Detour)	200	L.F.	9.00	1,800
End Anchors (Detour)	2	EA	450.00	900
Steel Beam Guardrail	1,625	L.F.	10.00	16,250
End Anchors	4	EA	500.00	2,000
Pavement Markings	13,600	L.F.	0.25	3,400
Temp. Silt Ditch	400	C.Y.	5.00	2,000
Straw Bales	50	EA	10.00	500
Grassing	16	AC	1800.00	28,800
Trees	7	AC	3500.00	24,500
SUBTOTAL				$1,043,938
CONTINGENCIES @ 10%				104,394
ROADWAY TOTAL				$1,148,332

BRIDGE

Dewatering System, Install & Remove	Job	L.S.	-	$ 8,000
Dewatering System, Operation & Maint.	200	DAYS	400.00	80,000
Bridge Excavation	732	C.Y.	15.00	10,980
Concrete for Structures, CL A	2,240	C.Y.	285.00	638,400
Reinf. Steel, Structures	422,800	LB.	0.40	169,120
Type III P.C. Beams, 61'-7"	70	EA	4000.00	280,000
Type IV, P.C. Beams, 92'-7"	9	EA	8335.00	75,015

TABLE 1
DETAILED COST ESTIMATE
(continued)

DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
Elastomeric Bearings	Job	L.S.	-	$ 20,000
Piling, Steel HP-12X53	3,024	L.F.	25.00	75,600
18" Ø Pilot Holes	224	L.F.	25.00	5,600
Load Test, Steel HP-12X53	1	EA	10000.00	10,000
Test Pile, Steel HP-12X53	2	EA	4000.00	8,000
12" Ø Slope Drains	92	L.F.	15.00	1,380
2 Vertical Clearance Gages	Job	L.S.	-	2,000
SUBTOTAL				$ 1,384,095
CONTINGENCIES @ 10%				138,410
BRIDGE TOTAL				$ 1,522,505
U.S. ROUTE 52 BRIDGE & ROADWAY TOTAL				$ 2,670,837

12. Explanation of Differences from Approved Estimate. The original estimate included costs for providing a four-lane facility at U.S. Route 52. The cost of the additional two lanes was deleted after receiving notification from SCDHPT during preparation of the design memorandum that only a two-lane facility would be required. The latest estimate of costs for all road relocations is $5,009,606. (Reference: paragraph 52c of the basic DM) The estimated lump-sum agreement of $2,670,837 minus the agreeable reduction for difference in width is in addition to the previously estimated costs.

13. It is recommended that the lump-sum agreement as set forth in this supplement be approved as a basis for the negotiation of a relocation contract between the Government and the South Carolina Department of Highways and Public Transportation.

COOPER RIVER REDIVERSION PROJECT

LAKE MOULTRIE AND SANTEE RIVER, SOUTH CAROLINA

DESIGN MEMORANDUM NO. 10

NECESSITY AND PLAN

FOR

RELOCATION OF ROADS

SUPPLEMENT NO. 1

Future Widening of U.S. Route 52

EXHIBIT A

Correspondence with Owner

U.S. ARMY ENGINEER DISTRICT, SAVANNAH
CORPS OF ENGINEERS
SAVANNAH, GEORGIA

SOUTH CAROLINA
DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION
P.O. BOX 191
COLUMBIA, S.C. 29202

February 12, 1980

Mr. Ralph N. Wheeler, Chief
Engineering Division
Department of the Army
Savannah District, Corps of Engineers
P. O. Box 889
Savannah, Georgia 31402

Dear Mr. Wheeler:

Please be advise that the Department's Six Year Construction Program includes the multi-laning of a section of U. S. Route 52 located in Berkeley and Williamsburg Counties beginning at its intersection with U. S. Route 17A north of Moncks Corner and extending in a northerly direction to Kingstree, a total distance of approximately 38.5 miles. The proposed improvements will consist of upgrading sections of the existing roadway to multi-lanes and constructing sections on new locations, if deemed practicable and justifiable resulting from preliminary engineering studies the Department currently has underway. Completion of this section of U. S. Route 52 will afford South Carolina a multi-lane facility in the U. S. Route 52 corridor from Charleston to the Florence-Darlington area.

In 1979, traffic in this corridor ranged upward to 18,000 vehicles per day. At this particular point, where the Rediversion project intersects with U. S. Route 52, the 1979 average 24 hour traffic volume amounted to 3,600 vehicles. It has been projected that the volume at the same point will increase to 6,000-8,000 vehicles per day 20 years hence. A volume of 6,000 vehicles per day is projected for the present two lane facility. However, a projection of 8,000 vehicles per day has been made for a multi-lane facility which is in accord with the Department's plan for providing a multi-lane facility between Florence and Charleston.

This increase in traffic will be brought about by the diversion of traffic from the I-95/I-26 corridor, which is presently being used by most of the traffic traveling between Florence and Charleston, due to the increased safety and comfort of travel in this corridor. Provision of a high type facility in the U. S. Route 52 corridor would encourage this diversion, thus saving the traveling public approximately 25 miles when making this trip, amounting to a substantial saving in fuel, over the period of a year. Predicted land use changes in arriving at these predicted traffic volumes were very conservative. Should land use changes rapidly accelerate, these traffic volumes would substantially increase.

For many years the U. S. Route 52 corridor has been a major north-south route emanating out of the Port of Charleston. Improvements in this corridor would enhance the availability of the Port facilities at Charleston by providing a more efficient access to I-95 north and the northeastern portion of the United States.

Perhaps, a greater importance to the country, as a whole is the improved access that will be afforded the various military installations in the Charleston area. For the record, Charleston has a major all weather port and is of major military importance.

Based on the facts stated above, it is the contention of the Department that any highway facility provided by the Corps of Engineers, where the Rediversion Project crosses U. S. Route 52, should be compatible with the Department's plan in this traffic corridor. Anything less than a multi-lane facility will not be compatible with our plans which are based on the concept that highway designs should be made to accommodate, not just the present traffic, but the design year traffic (20 years hence).

It is, therefore, formally requested that the U. S. Corps of Engineers provide for the construction and funding of a multi-lane facility, including the necessary bridging of the canal, in lieu of the current proposal by the Corps at the above referred to location.

Yours very truly,

E. S. Coffey
State Highway Engineer

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